

U-BOOT FAHRER HANDBUCH



GRONER. 1938

U-BOOT FAHRER HANDBUCH



Geheime Kommandosache

THIS DOCUMENT MUST NOT FALL INTO ENEMY
HANDS. IF YOUR SHIP IS IN DANGER OF BEING
COMPROMISED, DESTROY IMMEDIATELY.

GRONER. 1938

Silhouettes

MERCHANT VESSELS

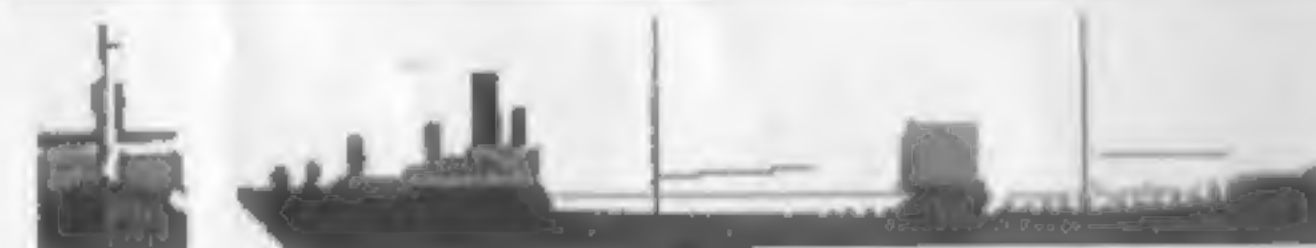
Abbr. LoA: Length overall
 Haw: Height at waterline
 Displ: Displacement in gross tons
 SP: Speed in knots



TRAMPS: Displ. 7,000-8,000 Tons LoA 180' Haw 64' SP 18k



CARGO LINERS: Displ. 10,000-12,000 Tons LoA 560' Haw 128' SP 24k



TANKERS: Displ. 16,000-18,000 Tons LoA 460' Haw 92' SP 20k



LINERS: Displ. 15,000-50,000 Tons LoA 900' Haw 162' SP 24

WARSHIPS



PATROL BOATS: Displ. 47 Tons LoA 73' Haw 30' SP 39k



DESTROYERS: Displ. 1,500-1,900 Tons LoA 355' Haw 76' SP 36k



CRUISERS: Displ. 6,000-7,000 Tons LoA 540' Haw 118' SP 32k



AIRCRAFT CARRIERS: Displ. 22,000-27,000 Tons LoA 800' Haw 136' Sp 30k



BATTLESHIPS: Displ. 32000-38000 Tons LoA 710' Haw 148' SP 28k

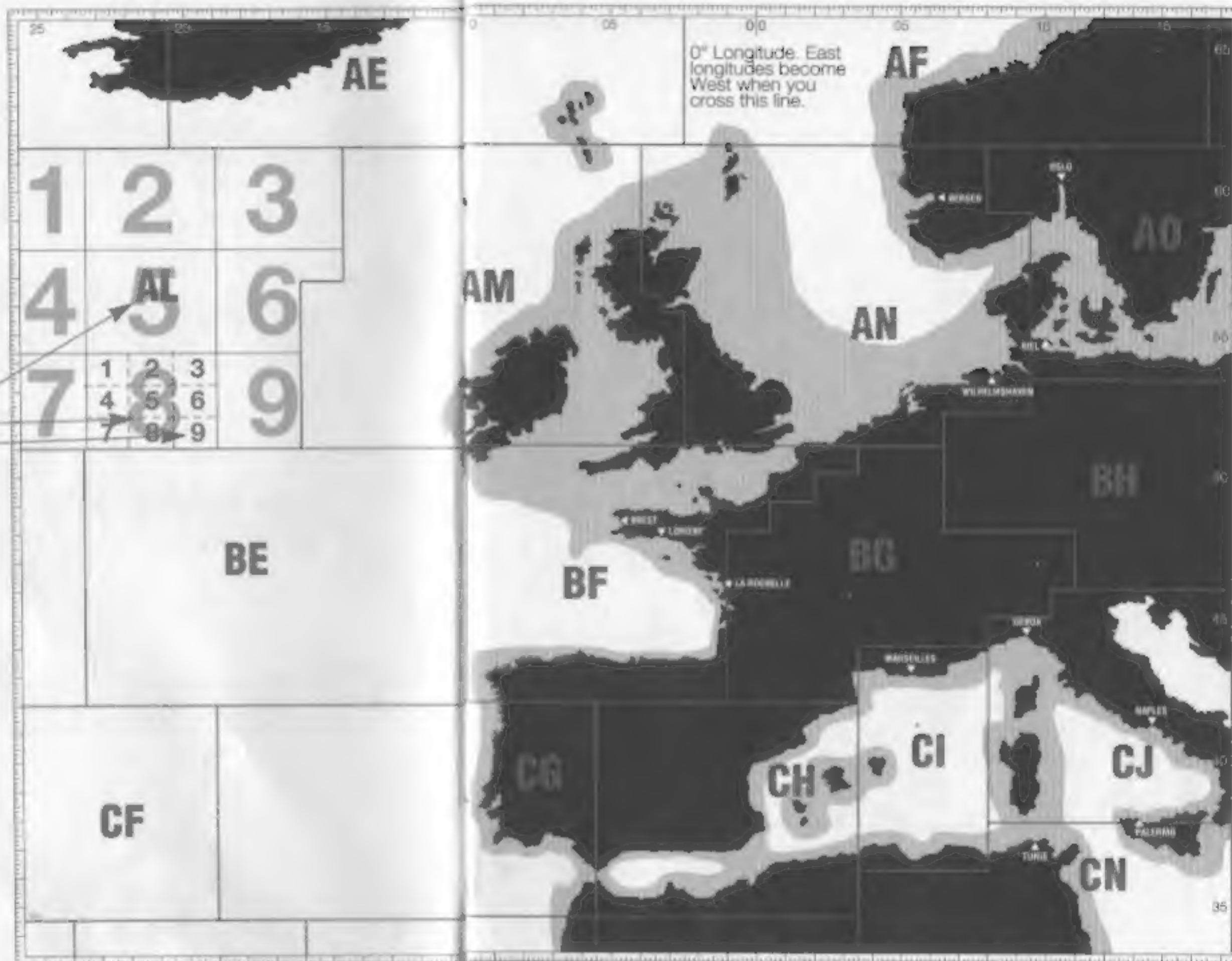
THE ATLANTIC GRID

In order to insure integrity of radio transmissions during time of war, the German High Command devised a grid reduction system to replace latitude/longitude coordinates in directing the mariner to a specific area.

The Atlantic Grid System consists of a two letter prefix followed by one or more digits.

Example Transmission:
PATROL SECTOR AL89
would lead you to sector AL,
sub-sector 8,
square 9.

The code for each sector in the North Atlantic Grid will be found in alphabetic order on the following pages.



AL

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1	3	1	2	3	1	2	3
6	4	5	6	4	5	6	
9	7	8	9	7	8	9	
4	3	1	2	3	1	2	3
6	4	5	6	4	5	6	
9	7	8	9	7	8	9	
7	3	1	2	3	1	2	
6	4	5	6	4	5	6	
9	7	8	9	7	8	9	

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AM

	2	3	1	2	3	1	2
	5	6	4	5	6	4	5
	8	9	7	8	9	7	8
	2	3	1	2	3	1	2
4	5	6	4	5	6	4	5
7	8	9	7	8	9	7	8
1	2	3	1	2	3	1	2
4	5	6	4	5	6	4	5
7	8	9	7	8	9	7	8

AN

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AO



BE

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1	2	3	1	2	3	1	2	3
4	1	6	4	2	6	4	3	6
7	8	9	7	8	9	7	8	9
1	2	3	1	2	3	1	2	3
4	5	6	4	5	6	4	5	6
7	8	9	7	8	9	7	8	9
1	2	3	1	2	3	1	2	3
4	7	6	4	8	6	4	9	6
7	5	6	7	5	6	7	5	6

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BF

1	2	3	1	2	3	1	2	3
4	1	6	4	2	6	4	3	6
7	8	9	7	8	9	7	8	9
1	2	3	1	2	3	1	2	3
4	5	6	4	5	6	4	5	6
7	8	9	7	8	9	7	8	9
1	2	3	1	2	3	1	2	3
4	7	6	4	8	6	4	9	6
7	5	6	7	5	6	7	5	6

BREST:
48.25 N
04.35 W

LORIENT:
47.42 N
03.20 W

LA ROCHELLE:
46.10 N
01.15 W

CF

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2	1	3	3
6	4	5	6
9	7	8	9
5	1	2	3
6	4	5	6
9	7	8	9
8	1	2	3
6	4	5	6
9	7	8	9

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CG

1	2	3	1	2	3	1	2	3
4	5	6	4	5	6	4	5	6
7	8	9	7	8	9	7	8	9
1	2	3	1	2	3	1	2	3
4	5	6	4	5	6	4	5	6
7	8	9	7	8	9	7	8	9
1	2	3	1	2	3	1	2	3
4	5	6	4	5	6	4	5	6
7	8	9	7	8	9	7	8	9

CH

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CI



MARSEILLES

42.52 N

05.20 E



CJ**Geheime Kommandosache****Geheime Kommandosache****CN**

PALESTINE:
38.05 N
12.45 E

TUNIS:
37.15 N
09.40 E



TACTICS

PROVEN ATTACK TACTICS

Although no two encounters at sea are exactly alike, certain precautions prevail, and the wise Unterseeboot Mariner will heed them.

Daylight Attacks on the surface have a very low probability of success. By the time you have closed to within torpedo range, it is likely you will have been spotted. And once spotted you are no longer the predator, you have become the prey. Most warships will open up immediately with 5 or 6 inch guns, and it takes only one hit to send you to the bottom.

A Merchant ship will simply go to full speed, turn away, and outrun you. Remember, speed is not your strong point. A Type VII's top speed is only 16 or 17 knots. Almost any surface vessel can outrun you and some can literally sail circles around you. Your strength lies in stealth and surprise. Underwater attacks during daylight are marginally more successful. There is a good chance that you will be able to get off a round of torpedoes before being spotted if you time it just right. The trick here is getting to within torpedo range underwater. You can make, at the most, 8 knots at periscope depth; this is not sufficient if your target is sailing at an oblique angle to your course. (If his speed is greater than yours, you will never close.)

Night Attacks are always to be preferred. On the surface you can often get quite close to a target without being spotted. If the target is closing with you (sailing at an acute angle), you can then submerge to periscope depth, and with a night sky to hide you, become almost invisible. Although there is always a chance that the target will alter course and sail away from you, it can be worthwhile stalking your target just outside of his visible range during daylight hours; waiting until nightfall to launch your attack.

Firing torpedoes, when and how many, can be a critical consideration. Bear in mind that it will take 2 or 3 hits on a capital ship to sink her. And although you can usually put away a thin-skinned destroyer with one hit, the prudent Commander will cover his odds with a spread of 3 at long ranges, or where the target presents a minimum profile.

ESCAPE TACTICS

Your view from the bridge may seem to reveal a vast and endless sea, but that horizon line is actually less than 10 miles away. A large ship is visible at that distance. You are not. Therefore, because most other vessels present a much larger silhouette than your U-boat with its decks awash, you'll more than likely see another ship long before it sees you.

An experienced Mariner can often identify the type of vessel well before being spotted himself. The other vessel's ASDIC, if so equipped, is ineffective in locating surface vessels. He must rely on his eyes as you must rely on yours.

Escape then, when on the surface and not yet spotted is simply a matter of putting as much distance between your boat and the enemy as quickly as possible. The most efficient tactic is to make an immediate 180° turn and sail away at high speed until a view from your stern shows him disappearing over the horizon.

This tactic will not work if the ship is closing with you at a speed greater than yours. Unless he inexplicably changes course, he will gain on you even if he doesn't know you're there. Eventually, of course, he will spot you.

In this case, the best tactic seems to be to dive deep, make a 90° turn, and try to steal away. The drawbacks to this maneuver are that you immediately expose yourself to the likelihood of being picked up on the enemy's ASDIC, plus you have no ability to fight back as you cannot launch torpedoes at depths greater than 20 meters. Once spotted however, this may be your only choice. Some Commanders have found that lying silently on the bottom and waiting it out can be an effective ruse.

Deep water will be your best friend here; as a depth-charge, like an aircraft's bomb, loses accuracy with every meter it falls.

GLOSSARY

Abaft: toward the stern of a boat or ship.

Adressbuch: a U-boat code book for disguising grid (Marinequadrat) positions on an ocean chart in radio (wireless) transmissions.

aft: rearward, or toward the stern of a vessel.

Alarm! order for an emergency dive by a U-boat.

angle-on-the-bow: the difference between the U-boat's line of sight and the target's heading.

ASDIC: an acronym standing for Anti-Submarine Detection Investigation Committee (British), commonly used to describe the apparatus housed in a dome on the underside of an antisubmarine vessel's hull, which sent out sound waves in pulses that, striking an underwater object such as a U-boat, returned a signal that gave the range and bearing (and after 1944 the depth) of the object. See sonar.

"Auf Gefechtsstationen!": "Battle stations!"

ballast tanks: tanks outside the pressure hull of a U-boat which, when flooded with water, enabled the boat to dive.

BdU (Befehlshaber der Unterseeboote): Commander in Chief, U-boats. Though specifically denoting Admiral Karl Donitz, the abbreviation was also commonly used to identify the Admiral's staff or headquarters.

Biscay, Bay of: a bay of the Atlantic Ocean between northwestern France and Spain.

Bootskanone: the deck gun, or artillery piece, carried forward on a U-boat.

bow: the forward end of a vessel.

Bridge: the raised structure from which a power vessel on the surface is navigated.

bulkhead: a wall-like structure inside seagoing vessels used to subdivide space, form watertight compartments, or strengthen the interior framing.

bunkers: on a U-boat, the exterior tanks that contained diesel fuel.

capital ship: a term used throughout World War II to define the most significant warships.

conning tower (Kommandoturm): the low observation tower of a U-boat, containing the helmsman's steering controls and topped by an open bridge.

control room: see Zentrale.

diesel: the compression-ignition type engine used on U-boats; also the combustible petroleum distillate used as fuel.

DR: dead reckoning, the calculation of one's position at sea based on course, speed, and elapsed time since the last observed position, taking into account currents, winds, and compass deviations.

eel: in German aal, a U-boat nickname for torpedo.

E motors: battery-powered electric motors on a U-boat.

Facherschuss: a simultaneous spread, or fan, launch of two or more torpedoes.

Fangschuss: a finishing shot, or coup de grace.

fathom: six feet or 1.829 meters.

flank: the extreme right or left side.

fore: forward, or toward the bow of a vessel.

Fregattenkapitan: Captain (junior).

Geheime Kommandosache: "top secret."

green: starboard (Steuerbord), that is, right (U-boat usage).

Groener: the merchant fleet handbook, with silhouettes of all known freighters and tankers.

hatch: circular passageway opening on the deck or in interior bulkheads of a U-boat.

HE (hydrophone effect): underwater sound, for example, propeller cavitation of a surface ship or the path of a torpedo, detected by hydrophone and shown on instruments as having a certain bearing and range. (See hydrophone.)

Hilfskreuzer: German term for an armed merchant cruiser of the Royal Navy.

hull: the primary, hollow, floatable structure of a boat or ship.

hull down: the appearance of a ship at great distance when only its masts and smokestack can be seen over the horizon.

hydrophone: underwater sound detection device employed by both U-boats and surface warships. In German, Horchgerat. (See HE.)

hydroplanes: extended surfaces fore and aft on a U-boat's outboard hull that directed the pitch of the boat underwater.

Kaleu: diminutive form of the rank Kapitänleutnant (Lieutenant Commander).

Kapitanleutnant: Lieutenant Commander.

Kapitan zur See: Captain.

keel: the central structural member of a boat's or ship's hull that runs fore and aft along the bottom of the hull for the full distance from stem to stempost.

Keroman: protective U-boat bunkers, or pens, at Pointe de Keroman near the harbor entrance at Lorient, France.

knot: A unit of speed equivalent to one nautical mile per hour. See nautical mile.

Korvettenkapitan: Commander.

Kriegsmarine: the World War II German Navy.

Kriegstagebuch (KTB): German war diary kept by ships and boats at sea, also by shore-based headquarters staffs.

Kurzsignale: a U-boat's short-signal position report by radio (wireless).

Leutnant zur See: Lieutenant junior grade.

U. Leitender Ingenieur: "Chief Engineering Officer."

Lotapparat: a U-boat's equipment for determining depth in fathoms or in meters.

maneuvering room: electric motor room on a U-boat, which housed the battery-powered dynamotors (E motors), used to propel the boat when submerged.

Marinequadrat: naval square, an arbitrarily drawn rectangular region of the ocean permitting the organization of the ocean surface into a grid chart where the many individual naval squares were identified by letter digraphs and numbered zones.

Mehrfach: a multiple, though not simultaneous, launch of torpedoes.

meter: 39.37 inches, 3.3 feet.

Morse code: a message system of dots and dashes, clicks and spaces, or flashes of light that represent letters of the alphabet.

nautical mile: 1.1516 statute miles.

Oberleutnant zur See: Lieutenant senior grade.

OKM (Oberkommando der Kriegsmarine): German Naval High Command.

periscope: an extendible tube like optical device containing an arrangement of prisms, mirrors, and lenses that permitted a U-boat to view the surface of a sea from a submerged position.

port: the left-hand side of a vessel as one faces forward.

pressure hull: the U-boat cylinder containing personnel and essential operating systems that was designed to withstand many atmospheres of water pressure when submerged.

Q-ship: a decoy merchant ship with flotation cargo and hidden deck armament designed to lure a surfaced U-boat to close-in destruction.

quarter: the arc of 45 degrees to either side horizontally from the stern of a vessel.

red: port (Backbord), that is, left (U-boat usage).

Ritterkreuz des Eisernen Kreuzes: Knight's Cross of the Iron Cross.

Rohr: torpedo tube.

RPM: revolutions per minute.

Schussmeldung: a U-boat's required "shooting report" on each torpedo action.

Sonar: an acronym standing for Sound Navigation, Ranging, the U.S. Navy echo-ranging sound apparatus equivalent to the British ASDIC.

Spargel: literally, "asparagus"; U-boat nickname for the periscope.

starboard: the right-hand side of a vessel as one faces forward.

stern: the after (rear) part of a vessel.

Tiefenmesser: a U-boat's depth-pressure gauge, or depth manometer.

tonnage: measurement of all the enclosed spaces in a ship expressed in hundreds of cubic feet.

Torpedo-Schuss-Empfänger: torpedo launch receiver, which, in the fore and aft torpedo rooms of a U-boat, received target data from the Vorhaltrechner and fed it into the guidance systems of the torpedoes. Abbreviated T-Schu.

trim: the balancing of a submarine's (U-boat's) weight and equilibrium underwater.

U-boat: see Unterseeboot.

Ubootwaffe: the German submarine (U-boat) fleet.

Unterseeboot: "submarine", abbreviated as U-boat. Primarily, a surface attack vessel of the German Navy with the ability to submerge to depths of up to 250 meters for short periods.

UZO (Uboot-Zieloptik): surface target-aiming binoculars with luminous graticule attached to a bridge post that automatically fed target line-of-sight bearing and range to the Vorhaltrechner.

Vorhaltrechner: A Siemens-made electromechanical deflection calculator in the U-boat conning tower that fed attack headings into the gyrocompass steering mechanism of the torpedoes in their tubes.

Wabo: German nickname for Wasserbombe (q.v.).

Wasserbombe: German term for a depth charge dropped on U-boats by British and American surface ships and aircraft.

way: the motion or speed of a ship or boat through the water.

Wintergarten: the open, railed platform on the after part of a U-boat bridge.

Zentrale: U-boat control room, directly below the conning tower and bridge, containing all diving controls.

TYPE VII C

Description: 770 ton Atlantic U-boat

Year of commissioning: 1940

Number built: 659

Crew: 44

Max. speed surfaced: 17

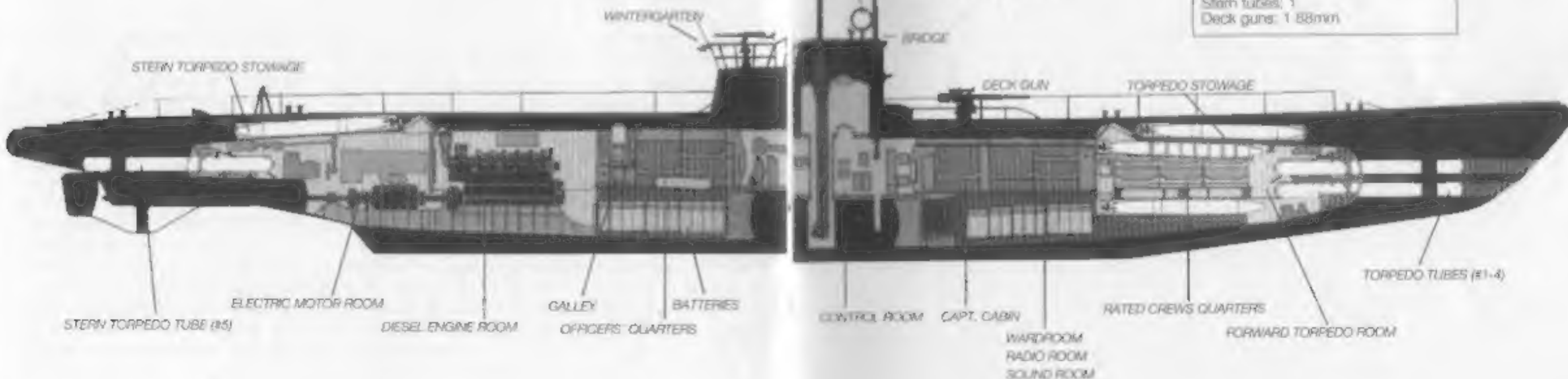
Max. speed submerged: 8

Torpedoes: 14

Bow tubes: 4

Stern tubes: 1

Deck guns: 1 88mm



NOTES



A series of horizontal lines for writing notes, spanning the width of the page below the emblem.